User's Manual

LGZ 7225
Long Range Handheld CCD Scanner

25-ULGZMU01-01

Keyboard Wedge Interface
USB Interface
RS232 Interface

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Getting Started

General Information

The LGZ 7225 CCD Scanner utilizes state-of-the art imaging technology similar to that found in digital cameras, fax machines and video camcorders. The captures an "image" of the bar code and converts it into digital signals that the host computer understands.

The scanner automatically recognizes most common bar code symbologies.

The scanner, which utilizes miniature, surface-mounted electronics, has no moving parts and will provide years of trouble-free operation.

The LGZ 7225 is available in several different interface configurations.

- Keyboard Wedge (PS2 or AT/XT)
- RS 232
- USB

Unpacking

Remove the scanner from its packaging and inspect it for damage. Save the carton and packing material. If the scanner was damaged in transit, call the dealer or distributor from whom you purchased it. If you purchased it directly from Opticon, call Opticon Customer Service Dept. at 800-636-0090.

Opticon Customer Service and Support

If you have any questions or need assistance with installing or programming your scanner call Opticon Customer Service Department at (800) 636-0090.

Before you call, record the model number of the scanner. This information is located on the bottom side of the scanner. Also please have the scanner available plus some bar codes to scan.

LGZ7225 Long Range Handheld CCD Spec	
	160 g (cable not included)
Cable - K/B Wedge	Straight 2.0 m
Cable - universal type	Straight 2.3 m
Connector type	RJ-45 phone jack connector
Case material	ABS plastic
Cushion material	Rubber
Electrical	
Input Voltage	5 VDC ± 0.25V
Power - Operating	1275 mW
Power - Standby	600 mW
Current - Operating	255 mA @ 5VDC
Current - Standby	120 mA @ 5VDC
DC Transformers	Class 2; 5VDC @ 450 mA
Agency listing	UL, FCC Class A
Environmental	
Operating Temperature	0° to 45°C (32°F to 113°F)
Storage	-40°C to 60°C (-40°F to 140°F)
Humidity	5% to 90% relative humidity, non-condensing
Light Level	Up to 60000 Lux
Shock	1.5m drop onto concrete
Contaminants	Seals to resist airborne particulate contaminants
Ventilation	None required

Default Setting for each barcode shown as below:

Code Type	Read	Checksum Verifacation	Checksum Transmission	Code ID
UPC-A	X	X	X	A
UPC-E	X	X	X	E
EAN-13	X	X	X	F
EAN-8	X	X	X	FF
Code-39	X			*
Interleaved 2of5	X	X		i
Industrial 2of5				i
Matrix 2of5				B
Standard 2of5				i
China Post				t
Codabar				%
Code-128	X	X		#
Code-93				&
Code-11				O
MSI/Plessey				@
UK/Plessey				@
Telepen				S
Italian Pharmaode.				p

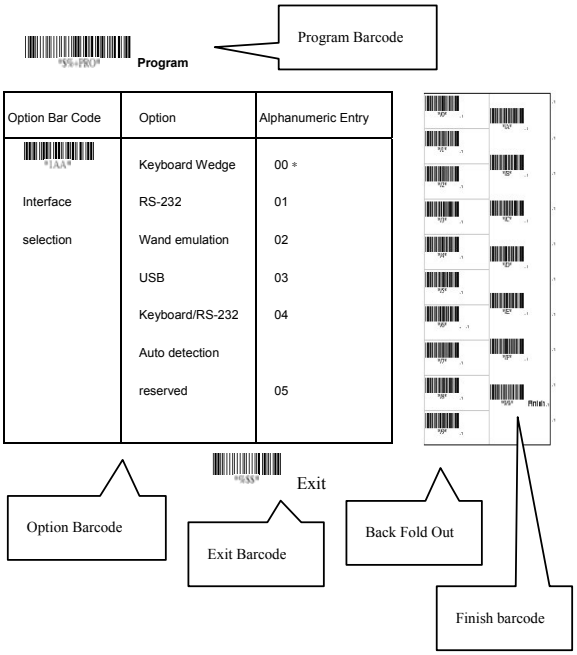
Programming	
Programming method	Manual (Reading special barcode) DOS command through RS-232, Windows configuration program
Program upgrade	Enabled by built-in flash memory
Programmable characteristics	Code type selection, check digit selection Decoding option Decoding option Transmitted character delay, Header selection, trailer selection, message suffix, good read beep tone and volume, scanner trigger selection Keyboard emulation type (intermessage delay, keyboard type and keyboard language) Serial interface type (ACK/NAK, Xon/Xoff, RTS/CTS, good read LED control, start/stop bits)

Programming the LGZ7225

To program the LGZ7225 you must scan a series of programming barcode in the correct order. Fold out the back cover of this manual. You will see a table of alphanumeric barcodes, which are used to program the various options presented.

To program each option, you must:

1. Scan the **Program barcode** on the parameter setting part.
2. Enter the option mode by scanning the **Option Bar Code** (also on the Parameter setting part).
3. To the right of the option barcode, the necessary alphanumeric inputs are listed. Scan these alphanumeric entries from the **back fold out** page. To confirm above steps, you must scan the **Finish barcode** on the back fold out page.
4. Once you have finished programming. Scan the **Exit** barcode, listed on the lower right hand corner of each parameter setting part.


Program
Program Barcode
Option Bar Code
Option
Alphanumeric Entry
Interface
selection
Keyboard Wedge
00 *
RS-232
01
Wand emulation
02
USB
03
Keyboard/RS-232
04
Auto detection
reserved
05
Exit
Option Barcode
Exit Barcode
Back Fold Out
Finish barcode

Interface Selection

This decoder built-in scanner comes in one model and supports interfaces such as keyboard wedge, RS232 serial wedge, wand emulation, and the latest USB interface. In most of the cases, simply sutilizing the an appropriate cable with a device code will work for a specific interface.

Interface selection: You can change factory interface default for other type interface. By plugging different cables, setting correct interface, then the scanner will be changed to another interface. However, you must make sure which cable you need.

Keyboard/RS232/UBS Auto detection: By setting this function, it will automatically select the Keyboard wedge or RS-232 or UBS interface for user.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Interface selection	Keyboard Wedge	00
	RS-232	01
	Wand emulation	02
	USB	03
	Keyboard /RS232/USB Auto detection	04 *
	Reserved	05

Note: * -Default

Exit

Keyboard wedge

As a keyboard interface, the scanner supports most of the popular PCs and IBM terminals. The installation of the wedge is a fairly simple process without any changes of software or hardware.

Keyboard Type: Select keyboard type connector of your host computer. Scanner must be selected to the appropriate host interface cable converter.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Keyboard type	IBM AT, PS/2	00 *
	Reserved	01
	Reserved	02
	Reserved	03
	Reserved	04
	Reserved	05
	Reserved	06

Exit

Keyboard wedge

Keyboard Layout: The selecting of keyboard layout supports many country languages other than USA keyboard layout. First you need to confirm country language that you desire. In DOS, using command “keyb” to select the desirable keyboard layout or in WINDOWS entry “Control” then pops “Keyboard” to select country at “language” item. For details, please refer to your DOS or WINDOWS user’s manual.

Keyboard Speed: By selecting, you can change output speed of scanner to match with host computer. Generally, set 00 or 01 in working high speed. If some output characters of barcode have been lost, you may need to set 05 or 06 to match your host keyboard speed.

Function Key: Set Enable, scanner can output code as pressing function-key in your application program while the barcode datas contain ASCII value between 0116 to 1F16. Refer to ASCII table, page 94.

Numeric Key: The Keypad has to be selected if your application program is only keypad numeric code acceptable. So, scanner will output code as press numeric keypad when it read numeric digit. (The keypad is in the right side of keyboard, and Num Lock control key is also on.) If Alt+Keypad is selected, Caps Lock and output will be independent.

$%+PRO **Program**

Option Bar Code	***Option***	***Alphanumeric Entry***

2AB Keyboard layout	USA	00 *
	Belgium	01
	Danish	02
	France	03
	Germany	04
	Italian	05
	Portuguese	06
	Spanish	07
	Swedish	08
	Switzerland	09
	UK	10
	Latin American	11
2AC Keyboard speed	0-8	00-08
	0 : high clock rate	01 *
	8 : low clock rate	
2AD Function key	Disable	00
	Enable	01 *
2AE Numeric key	Alphabetic key	00 *
	Numeric keypad (Num lock state only)	01
	Alt+Keypad	02

%$$ **Exit**

Keyboard wedge

Caps Lock: By selecting Caps Lock or No Caps Lock, scanner can get Caps Lock status.

Power-on simulation: All of the PCs check the keyboard status during power-on selftest. It is recommended to Enable function if you are working without keyboard installation. It simulates keyboard timing and pass keyboard present status to the PC during power-on.

Inter-character delay: This delay is inserted after each data characters transmitted. If the transmission speed is too high, the system may not be able to receive all characters. Adjust it and try out suited delay to make system work properly.

Block transmission delay: It is a delay timer between barcode data output. The feature is used to transfer continually with shorter barcode data or multi-field scanning.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
2AF Caps lock	Caps lock”ON” Caps lock”OFF”	00 01 *
2AG Power-on simulation	Disable Enable	00 * 01
2AH Inter-character delay	00-99 msec	00-99 02 *
2AI Block transmission delay	00-99 10 msec	00-99 10 *

%$$

Exit

RS-232

CTS: Clear To Send (Hardware Signal)
RTS: Request To Send (Hardware Signal)
Xon: Transmit On (ASCII Code 11_{16})
Xoff: Transmit Off (ASCII Code13_{16})

Flow control:
None-The communication only uses TxD and RxD signals without regard for any hardware or software handshaking protocol.
RTS/CTS-If the scanner wants to send the barcode data to host computer, it will issue the RTS signal first, wait for the CTS signal from the host computer, and then perform the normal data communication. If there is no replied CTS signal from the host computer after the timeout (Response Delay) duration, the scanner will issue a 5 warning beeps.
Xon/Xoff- When the host computer is unable to accept data, it sends a Xoff code to inform the scanner to suspend data transmission, and Xon to continue.
ACK/NAK- When the ACK/NAK protocol is used, the scanner waits for an ACK (acknowledge) or (not acknowledge) from the host computer after data transmission, and will resend in response to a NAK.

Inter-character delay: It is delay time between data character's data output. It is also same as Inter-char. delay of keyboard wedge.

Block transmission delay: It is a delay time between barcode data output. It is also same as Block transmission delay of keyboard wedge.

Response delay: This delay is used for serial communication of the scanner to waiting for handshaking acknowledgment from the host computer.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Flow control	None RTS/CTS Xon/Xoff ACK/NAK	00 * 01 02 03
 Inter-character delay	00-99 (msec)	00-99 00 *
 Block transmission delay	00-99 (10 msec)	00-99 00 *
 Response delay	00-99 (100 msec)	00-99 20 *

Exit

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Baud rate	300 BPS 600 BPS 1200 BPS 2400 BPS 4800 BPS 9600 BPS 19200 BPS 38400 BPS	00 01 02 03 04 05 * 06 07
 Parity	None Odd Even	00 * 01 02
 Data bit	8 bits 7 bits	00 * 01
 Stop bit	One bit Two bits	00 * 01

Exit

Wand Emulation

Bar/space polarity:
High/low- Black will be transmitted as a high voltage level (+5) and space as low level (0V).
Low/high- Black will be transmitted as a low voltage level (0V) and space as high level (+5).

Initial polarity: You must make sure what is Initial polarity of your wand decode device in stand-by (idle). So, initial signal state as a High voltage level (+5) or Low voltage level (0V).

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Bar/space polarity	High/low Low/high	00 * 01
 Initial polarity	Low High	00 * 01

Exit

Wand Emulation

Output speed: This setting is same as serial transmission baud rate, and it must be approbated your wand decode resolution. The unit of speed is a width of minimum narrow bar.

Margin delay: It is a timer of zone like space zone of barcode label margin. The width of margin time will be added before and after in each barcode data automatically when it is transmitted.

Transmit delay: It is a delay time between barcode data output. It is the same as Block transmission delay of keyboard wedge.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Output speed	620 pps 1250 pps 2500 pps 5000 pps 10000 pps 20000 pps *pps: pixel per second	00 01 02 03 * 04 05

4AD Reserved		00 *
4AE Reserved		00 *
4AF Margin delay	00-99 (10 pixel)	00-99 15 *
4AG Transmit delay	00-99 (10 msec)	00-99 30 *

%$$

Exit

Scan

Scanning mode:
Good-read off-The trigger button must be pressed to activate scanning. The light source of scanner stops scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed.
Momentary-The trigger button acts as a switch. Press button to activate scanning and release button to stop scanning.
Alternate-The trigger button acts as a toggle switch. Press button to activate or stop scanning.
Timeout off-The trigger button must be pressed to activate scanning, and scanner stops scanning when no code is decoded after the Stand-by duration elapsed.
Continue-The scanner always keeps reading, and it does not matter when trigger button is pressed or duration is elapsed.

Same Barcode delay time: If the barcode has been scanned twice, then only the first barcode will be accepted.

Double confirm: If it is enabled, the scanner will require a several times successful decoding to confirm the barcode data. The more confirming times required the more inhibitive miss-reading code will be shown. If you set Double confirm, the Multi field scan Enable function won't be able to work.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Scanning mode	Good-read off Momentary Alternate Timeout off Continue	00 01 * 02 03 04
 Stand-by duration	01-99 (second)	00-99 10 *
 Same barcode delay time	01-99 (10 msec)	01-99 50 *
 Double confirm	00-99 (00: no double confirm)	00-09 00 *

Exit

Scan

Multi field scan: The scanner can be read many sets of barcode data on the same scanning line at the same time, even if they are different kinds of barcode symbology.

Global min./max. code length: Global Minimum and Maximum length can be set to qualify data entry. The length is defined as the actual barcode data length to be sent. Label with length exceeds these limits will be rejected. Make sure that the Minimum length setting is no greater than the Maximum length setting, or otherwise the labels of the symbology will not be readable. In particular, you can set the same value for both Minimum and Maximum reading length to force the fixed length barcode decoded. The values of setting have no effect on certain symbologies with fixed length.

Notes 1): Please set the min/max length if you have special demand for individual barcode.

2): Include the Check sum digits if you want to set Global min/max code length.

Inverted image scan:. Set Enabled the scanner will scan both black/white barcode with white/black background.

CTS trigger: This operation enabled an external device to control scanning. The CTS trigger is controlled by apply an external trigger signal to the CTS input. When active, this signal causes scanning to begin as the scanner's trigger was depressed.

Position indication: This function can indicate the specific location before scanning. You can also set up the time of indication(except AS-8110).

Program

Option Bar Code	*Option*	*Alphanumeric Entry*

7AE Multi field scan	Disable Enable	00 * 01
7AF Global min. code length	00-63	00-63 04 *
7AG Global max.code length	00-63	04-63 63 *
7AH Inverted image scan	Disable Enable	00 * 01
7AI CTS trigger	Disable Enable	00 * 01
7AK Position indication	Disable 30 second 60 second 90 second 120 second 150 second 180 second Continue	00 * 01 02 03 04 05 06 07

%$$ **Exit**

Indication

Exit

Power on alert: After power-on the scanner it will generate an alert signal to indicate a successful self-test.

LED indication: After each successful reading, the LED above the scanner will light up to indicate a good barcode reading.

Buzzer indication: After each successful reading, the scanner will beep buzzer to indicate a good barcode reading, and its Beep loudness, Beep tone freq. and Beep tone duration are adjustable.

Beep loudness/Beep tone freq./Beep tone duration: You can adjust Beep Loudness, Beep tone and Beep duration for a good reading upon favorite usage.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Power on alert	Disable Enable	00 01 *
 LED indication	Disable Enable	00 01 *
 Buzzer indication	Disable Enable	00 01 *
 Beep loudness	00-07	00-07 07 *
 Beep tone freq.	00-99 (100Hz)	00-99 26 *
 Beep tone duration	00-99 (10 msec)	00-99 10 *

Exit

UPCA

Read: Format

Leading Zero	Data Digits (11 Digits)	Check Digit

Check-sum transmission: By setting Enable, checks sum will be transmitted.

Truncate leading/ending: The leading or ending digits of barcode data characters can be truncated when these values are set to non-zero. It will beep instead of reading anything when the truncate value is more than the barcode data digits or the value of Truncate Leading is overlapped with that of the Ending. The maximum value of truncate digits is 15.

Code ID setting: Code ID setting is a character used to represent the symbol upon a succeeding reading. A Code ID setting is prefixed to the data begin or end transmitted if the feature is selected. If you want application to transmit Code ID, you must set Code ID transmission to Enable first. Refer to Code ID transmission.

Insertion group selection: The scanner offer one or two insertion group for own symbology. By setting one or two digits to indicate which insertion group you want to insert. You may refer to Character insertion.

Example: Group 2 → set 02 or 20.

Group 1 and 4 → set 14 or 41.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
NAA Read	Disable Enable	00 01 *

NAB Check-sum verification	Disable Enable	00 01 *
NAC Check-sum transmission	Disable Enable	00 01 *
NAD Max.code length	00-64	00-64 64 *
NAE Min.code length	00-64	00-64 01 *
NAF Truncate leading	0-15	00-15 00 *
NAG Truncate ending	0-15	00-15 00 *
NAH Code ID setting	00-ffH ASCII code	00-ffH < A > *
NAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

UPCA

Supplement digits: The Supplement digits barcode is the supplemental 2 or 5 characters for WPC code.

Format

Leading Zero	Data Digits (11 Digits)	Check Digit	Supplement Digits 2 or 5 or UCC / EAN 128

Truncate Leading zero: The leading “0” digits of UPCA data characters can be truncated when the function is enabled.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Supplement digits	None	00 *
	2 digits	01
	5 digits	02
	UCC/EAN 128	03
	Auto detection	04
 Truncate Leading zero	Disable	00
	Enable	01 *

Exit

UPCE

Read: Format

Leading Zero	Data Digits (6 Digits)	Check Digits

Check-sum verification: The checksum of EAN-13 is optional and made as the sum of the numerical value of the data digits.

Check-sum transmission: By setting Enable, checks sum will be transmitted.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Read	Disable Enable	00 01 *
 Check-sum verification	Disable Enable	00 01 *
 Check-sum transmission	Disable Enable	00 01 *

Exit

UPCE

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Supplement digits:
Format

Leading Zero	Data Digits (6 Digits)	Check Digit	Supplement Digits 2 or 5 or UCC/EAN 128

Truncate Leading zero: Refer to Truncate Leading zero of UPCA.

Expansion: The expansion function is used only for UPCE and EAN-8 code reading. It extends to 13-digits with “0” digits when the feature is enabled.
Example: Barcode “0123654”
Output: “0012360000057”

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Truncate leading	0-15	00-15 00 *

OAG Truncate ending	0-15	00-15 00 *
OAH Code ID setting	00-ffH ASCII code	00-ffH < E > *
OAI Insert group selection	00-44	00-44 00 *
OAJ Supplement digits	None 2 digits 5 digits UCC/EAN 128 Auto detection	00 * 01 02 03 04
OAK Truncate Leading zero	Disable Enable	00 * 01
OAL Expansion	Disable Enable	00 * 01

%$$ **Exit**

EAN-13

Read: Format

Data Digits (12 Digits)	Check Digits

Check-sum verification: The checksum of EAN-13 is optional and made as the sum of the numerical value of the data digits.

Check-sum transmission: By setting Enable, checks sum will be transmitted.

Max./Min. code length: Each symbology has own Max./Min. Code Length. They can be set to qualify data entry. If their Max./Min. Code Length is zero, the Global Min./Max. Code Length is in effect. The length is defined as to the actual barcode data length to be sent. Label with length exceeds these limits will be rejected. Make sure that the Minimum length setting is no greater than the Maximum length setting, or otherwise all the labels of the symboblogy will not be readable. In particular, you can see the same value for both Minimum and Maximum reading length to force the fixed length barcode decoded.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 01 *

 *GAB* Check-sum verification	Disable Enable	00 01 *
 *GAC* Check-sum transmission	Disable Enable	00 01 *
 *GAD* Max.code length	00-64	00-64 64 *
 *GAE* Min.code length	00-64	00-64 01 *
 *GAF* Truncate leading	0-15	00-15 00 *
 *GAG* Truncate ending	0-15	00-15 00 *


%$$

Exit

EAN-13

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Supplement digits:

Format

Data Digits (12 Digits)	Check Digits	Supplement Digits 2 or 5 or UCC / EAN 128

ISBN/ISSN: The ISBN (International Standard Book Number) and ISSN (International Standard Serial Number) are two kinds of barcode for book and magazines. The ISBN is 10 digits with leading “978” and the ISSN is 8 digits with leading “977” of the “EAN-13” symbobolgy.

Example: Barcode “9789572222720” - Output: “9572222724”
Example: Barcode “9771019248004” - Output: “10192484”

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Code ID setting	00-ffH ASCII code	00-ffH < F > *
 Insert group selection	00-44	00-44 00 *
 Supplement digits	None 2 digits 5 digits UCC/EAN 128 Auto detection	00 * 01 02 03 04
 ISBN/ISSN conversion	Disable Enable	00 * 01

Exit

EAN-8

Read: Format

Data Digits (7 Digits)	Check Digits

Check-sum verification: The checksum of EAN-8 is optional and made as the sum of the numerical value of the data digits.
Check-sum transmission: By setting Enable, checks sum will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of EAN-13.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code Id setting: Refer to Code ID setting of UPCA
Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Read	Disable Enable	00 01 *
 Check-sum verification	Disable Enable	00 01 *

FAC Check-sum transmission	Disable Enable	00 01 *
FAD Max.code length	00-64	00-64 64 *
FAE Min.code length	00-64	00-64 01 *
FAF Truncate leading	0-15	00-15 00 *
FAG Truncate ending	0-15	00-15 00 *
FAH Code ID setting	Two characters 00-ffH ASCII code	00-ffH, 00-ffH < FF > *
FAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

EAN-8

Supplement digits: Format

Data Digits (7 Digits)	Check Digits	Supplement Digits 2 or 5 or UCC/EAN 128

Truncate Leading zero: Refer to Truncate Leading zero of UPCE.

Expansion: Refer to Expansion of UPCE.

$%+PRO

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
FAJ Supplement digits	None	00 *
	2 digits	01
	5 digits	02
	UCC/EAN 128	03
	Auto detection	04
FAK Truncate Leading zero	Disable	00 *
	Enable	01
FAL Expansion	Disable	00 *
	Enable	01

%$$

Exit

Code 39

Read: Format

Start	Data Digits	Checksum	End
“★”	(Variable)	(Optional)	“★”

Check-sum verification: The checksum of Code-39 is optional and made as the sum module 43 of the numerical value of the data digits.

Check-sum transmission: By setting Enable, checksum and will be transmitted.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 01 *
 Check-sum verification	Disable Enable	00 * 01
 Check-sum transmission	Disable Enable	00 * 01

Exit

Code 39

Max./Min. code length: Each symbology has own Max./Min. Code Length. They can be set to qualify data entry. If their Max./Min. Code Length is zero, the Global Min./Max. Code Length is in effect. The length is defined as to the actual barcode data length to be sent. Label with length exceeds these limits will be rejected. Make sure that the Minimum length setting is no greater than the Maximum length setting, or otherwise all the labels of the symboblogy will not be readable. In particular, you can see the same value for both Minimum and Maximum reading length to force the fixed length barcode decoded.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Format: The Full ASCII Code-39 is an enhanced set of Code-39 that is the data with total of 128 characters to represent Full ASCII code. It is combined one of the digits +, %, $ and/ with one of the alpha digits (A to Z).

Program

Option Bar Code	***Option***	***Alphanumeric Entry***

BAD Max. code length	00-64	00-64 00 *
BAE Min. code length	00-64	00-64 00 *
BAF Truncate leading	0-15	00-15 00 *
BAG Truncate ending	0-15	00-15 00 *
BAH Code ID setting	00-ffH ASCII code	00-ffH < * >
BAI Insert group selection	00-44	00-44 00 *
BAJ Format	Standard Full ASCII	00 * 01

%$$ **Exit**

Code 39

Append: This function allows several symbols to be concatenates and be treat as one single data entry. The scanner will not transmit the embedded appending code (space for Code-39). If Enable and other symbols were read again with the appended code, then codes will be transmitted without Code ID, Preamble and Prefix. When a symbol was decoded without the appended code, the data will be transmitted without Code ID and Prefix, but the Postamble Suffix codes are appended. This function is used when the first number of code 39 is a space. Example: □123456.

Start/end transmission: The start and end characters of Code-39 are"★". You can transmit all data digits including two "★".

$%+PRO **Program**

Option Bar Code	*Option*	*Alphanumeric Entry*
BAK Append	Disable Enable	00 * 01
BAM Start/end transmission	Disable Enable	00 * 01

%$$ **Exit**

Interleaved 2 of 5

Read: Format

Data Digits (Variable)	Checksum (Optional)

Check-sum verification: The checksum is made as the sum module 10 of the numerical values of all data digits.

Check-sum transmission: By setting Enable, checksum and will be transmitted.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Read	Disable Enable	00 01 *
 Check-sum verification	Disable Enable	00 01 *
 Check-sum transmission	Disable Enable	00 * 01

Exit

Interleaved 2 of 5

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	*Option*	*Alphanumeric Entry*
 Max. code leading	00-64	00-64 00 *
 Min. code leading	00-64	00-64 00 *
 Truncate leading	0-15	00-15 00 *
 Truncate ending	0-15	00-15 00 *

IAH Code ID setting	00-ffH ASCII code	00-ffH < i > *
IAI Insert group selection	00-44	00-44 00 *

%$$
Exit

Industrial 2 of 5

Read: Format

Data Digits (Variable)	Checksum (Optional)

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	***Option***	***Alphanumeric Entry***
 Read	Disable Enable	00 * 01
 Max. code length	00-64	00-64 00 *
 Min. code length	00-64	00-64 00 *

HAF Truncate leading	0-15	00-15 00 *
HAG Truncate ending	0-15	00-15 00 *
HAH Code ID setting	00-ffH ASCII code	00-ffH < i > *
HAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

Matrix 2 of 5 Eur

Read: Format

Data Digits (Variable)	Checksum (Optional)

Checksum Verification: The checksum is made as the sum module 10 of the numerical values of all data digits.
Checksum Transmission: By setting Enable, checksum and will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code Id setting: Refer to Code ID setting of UPCA.
Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Checksum Verification	Disable Enable	00 * 01

PAC Checksum Transmission	Disable Enable	00 * 01
PAD Max. code length	00-64	00-64 00 *
PAE Min. code length	00-64	00-64 00 *
PAF Truncate leading	0-15	00-15 00 *
PAG Truncate ending	0-15	00-15 00 *
PAH Code ID setting	00-ffH ASCII code	00-ffH < B > *
PAI Insert group selection	00-44	00- 44 00 *

%$$ **Exit**

Codabar

Read: Format

Start	Data Digits (Variable)	Checksum (Optional)	End

Checksum Verification: The checksum is made as the sum module 16 of the numerical values of all data digits.

Checksum Transmission: By setting Enable, checksum and will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * (8150/8210) 01 * (8110)
 Checksum Verification	Disable Enable	00 * 01

EAC Checksum Transmission	Disable Enable	00 * 01
EAD Max. code length	00-64	00-64 00 *
EAE Min. code length	00-64	00-64 00 *
EAF Truncate leading	0-15	00-15 00 *
EAG Truncate ending	0-15	00-15 00 *
EAH Code ID setting	00-ffH ASCII code	00-ffH < % > *

%$$

Exit

Codabar

Insertion group selection: Refer to Insertion group selection of UPCA.
Start/End type: The Codabar has four pairs of Start/End pattern; you may select one pair to match your application.
Start/End Transmission: Refer to Start/End Transmission of Code 39.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
EAI Insert group selection	00-44	00-44 00 *
EAJ Start/End type	ABCD/ABCD abcd/abcd ABCD/TN*E Abcd/tn*e	00 * 01 02 03
EAK Start/End transmission	Disable Enable	00 * 01

%$$ **Exit**

Code-128

Read: Format

Data Digits (Variable)	Checksum (Optional)

Checksum Verification: The checksum is made as the sum module 103 of all data digits.

Checksum Transmission: By setting Enable, checksum

Program

Option Bar Code	Option	Alphanumeric Entry
 *DAA* Read	Disable Enable	00 01 *
 *DAB* Checksum Verification	Disable Enable	00 01 *
 *DAC* Checksum Transmission	Disable Enable	00 * 01

Exit

Code-128

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Format: The Code-128 can be translated to UCC/EAN-128 format if it starts with FNC1 character. The first FNC1 will be translated to "]C1",and next to be a field separator code as <GS>($1D_{16}$).

]C1	Datas	<GS>	Datas	Checksum

Append: When the function is enabled, it won't show the data immediately if scanner read the barcode includes FNC2 code. It will show all data until it read the barcode, which doesn't have FNC2 code.

Field separator code: This feature is only used for UCC/EAN-128 format. This Field separator code means you can reassign second or after a FNC1 for your usage. The default of ASCII code is <GS>($1D_{16}$).

Program

Option Bar Code	Option	Alphanumeric Entry
 Max. code length	00-64	00-64 00 *
 Min. code length	00-64	00-64 00 *

DAF Truncate leading	0-15	00-15 00 *
DAG Truncate ending	0-15	00-15 00 *
DAH Code ID setting	00-ffH ASCII code	00-ffH < # > *
DAI Insert group selection	00-44	00-44 00 *
DAJ Format	Standard UCC/EAN-128	00 * 01
DAK Append	Disable Enable	00 * 01
DAL UCC/EAN-128 ID setting	00-ffH ASCII code	00-ffH < # > *
DAM Field separator code	00-ffH ASCII code	00-ffH 1DH *

%$$ **Exit**

Code-93

Read: Format

Data Digits (Variable)	Checksum1 (Optional)	Checksum2 (Optional)

Checksum Verification: The checksum is made as the sum module 47 of the numerical values of all data digits.
Checksum Transmission: By setting Enable, checksum and will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code Id setting: Refer to Code ID setting of UPCA.
Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Checksum Verification	Disable Enable (two digits)	00 01 *

CAC Checksum Transmission	Disable Enable	00 * 01
CAD Max. code length	00-64	00-64 00 *
CAE Min. code length	00-64	00-64 00 *
CAF Truncate leading	0-15	00-15 00 *
CAG Truncate ending	0-15	00-15 00 *
CAH Code ID setting	00-ffH ASCII code	00-ffH < & > *
CAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

Code-11

Read: Format

Data Digits (Variable)	Checksum1 (Optional)	Checksum2 (Optional)

Checksum Verification: The checksum is presented as the sum module 11 of all data digits.
Checksum Transmission: By setting Enable, checksum1 and checksum2 will be transmitted upon your selected checksum verification method.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code Id setting: Refer to Code ID setting of UPCA.
Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Checksum Verification	Disable One digit Two digits	00 01 * 02

AAC Checksum Transmission	Disable Enable	00 * 01
AAD Max. code length	00-64	00-64 00 *
AAE Min. code length	00-64	00-64 00 *
AAF Truncate leading	0-15	00-15 00 *
AAG Truncate ending	0-15	00-15 00 *
AAH Code ID setting	00-ffH ASCII code	00-ffH < O > *
AAI Insert group selection	00-44	00-44 00 *

%$$
Exit

MSI/plessey

Read: Format

Data Digits (Variable)	Checksum1 (Optional)	Checksum2 (Optional)

Checksum Verification: The MSI/Plessey has one or two optional checksum digits. The checksum is presented 3 kinds of method Mod10, Mod10/10 and Mod 11/10. The checksum1 and checksum2 will be calculated as the sum module 10 or 11 of the data digits.

Checksum Transmission: By setting Enable, checksum1 and checksum2 will be transmitted upon your selected checksum verification method.

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Checksum Verification	Disable Mod 10 Mod 10/10 Mod 11/10	00 * (8110) 01 * (8150/8210) 02 03

KAC Checksum Transmission	Disable Enable	00 * 01
KAD Max. code length	00-64	00-64 00 *
KAE Min. code length	00-64	00-64 00 *
KAF Truncate leading	0-15	00-15 00 *
KAG Truncate ending	0-15	00-15 00 *
KAH Code ID setting	00-ffH ASCII code	00-ffH < @ > *
KAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

UK/plessey

Read: Format

Data Digits (Variable)	Checksum1+2 (Optional)

Checksum Verification: The UK/Plessey has one or two optional checksum digits. The checksum1 and checksum2 will be calculated as the sum module 10 or 11 of the data digits.

Checksum Transmission: By setting Enable, checksum will be transmitted.

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Checksum Verification	Disable Enable	00 01 *

LAC Checksum Transmission	Disable Enable	00 * 01
LAD Max. code length	00-64	00-64 00 *
LAE Min. code length	00-64	00-64 00 *
LAF Truncate leading	0-15	00-15 00 *
LAG Truncate ending	0-15	00-15 00 *
LAH Code ID setting	00-ffH ASCII code	00-ffH < @ > *
LAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

Telepen

Read: IATA (International Air Transport Association).
Checksum Verification: The checksum is presented as the sum module 10 or 11 of the data digits.
Checksum Transmission: By setting Enable, checksum will be transmitted.
Max./Min. code length: Refer to Max./Min. code length of Code-39.
Truncate leading/ending: Refer to Truncate leading/ending of UPCA.
Code Id setting: Refer to Code ID setting of UPCA.
Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Checksum Verification	Disable Enable	00 * 01
 Checksum Transmission	Disable Enable	00 * 01

MAD Max. code length	00-64	00-64 00 *
MAE Min. code length	00-64	00-64 00 *
MAF Truncate leading	0-15	00-15 00 *
MAG Truncate ending	0-15	00-15 00 *
MAH Code ID setting	00-ffH ASCII code	00-ffH < S > *
MAI Insert group selection	00-44	00-44 00 *
MAJ Format	Numeric only Full ASCII only	00 * 01

%$$ **Exit**

Standard 2 of 5

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
JAA Read	Disable Enable	00 * 01
JAD Max. code length	00-64	00-64 00 *
JAE Min. code length	00-64	00-64 00 *

JAF Truncate leading	0-15	00-15 00 *
JAG Truncate ending	0-15	00-15 00 *
JAH Code ID setting	00-ffH ASCII code	00-ffH < i > *
JAI Insert group selection	00-44	00-44 00 *

%$$ **Exit**

China Post

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Max. code length	00-64	00-64 11 *
 Min. code length	00-64	00-64 11 *

SAF Truncate leading	0-15	00-15 00 *
SAG Truncate ending	0-15	00-15 00 *
SAH Code ID setting	00-ffH ASCII code	00-ffH < t > *
SAI Insert group selection	00-44	01-44 00 *

%$$ **Exit**

Italian Pharmacode

Read: Format

Data Digits (Variable)	Checksum1 (Optional)

Max./Min. code length: Refer to Max./Min. code length of Code-39.

Truncate leading/ending: Refer to Truncate leading/ending of UPCA.

Code Id setting: Refer to Code ID setting of UPCA.

Insertion group selection: Refer to Insertion group selection of UPCA.

Leading "A": If this function is enabled, each prefix of data shall be A.

Program

Option Bar Code	Option	Alphanumeric Entry
 Read	Disable Enable	00 * 01
 Max. code length	00-64	00-64 10 *

WAE Min. code length	00-64	00-64 09 *
WAF Truncate leading	0-15	00-15 00 *
WAG Truncate ending	0-15	00-15 00 *
WAH Code ID setting	00-ffH ASCII code	01-ffH < p > *
WAI Insert group selection	00-44	00-44 00 *
WAJ Leading “A”	Disable Enable	00 * 01

Exit

String setting

Prefix characters: Up to 22 ASCII characters may be sent before data digits.

Prefix	Data Digits	Suffix

Suffix characters: Up to 22 ASCII characters may be sent after data digits.

Preamble/ Postamble characters: They are appended to the data automatically when each barcode is decoded.

Example:

Add a prefix/suffix or preamble/postamble for all symbologies. In this example, you are sending a $ symbol as a prefix for all symbologies.

Steps:

1) Scan Programming and Prefix characters setting barcode.
2) Use the ASCII code table to find the value of $→24.
3) Scan 2 and 4 from the barcode on the fold out back page.
4) Scan Finish from the barcode on the fold out page.
5) Scan Exit barcode.

Program

Option Bar Code	Option	Alphanumeric Entry
 Prefix characters setting	None 1-22 characters	00 * 00-ffH ASCII code
 Suffix characters setting	None 1-22 characters	0D * 00-ffH ASCII code

8AC Preamble characters setting	None 1-22 characters	00 * 00-ffH ASCII code
8AD Postamble characters setting	None 1-22 characters	00 * 00-ffH ASCII code
8AE Insert G1 characters setting	None 1-22 characters	00 * 00-ffH ASCII code
8AF Insert G2 characters setting	None 1-22 characters	00 * 00-ffH ASCII code
8AG Insert G3 characters setting	None 1-22 characters	00 * 00-ffH ASCII code
8AH Insert G4 characters setting	None 1-22 characters	00 * 00-ffH ASCII code

%$$ **Exit**

String setting

Insert G1/G2/G3/G4 character setting: The scanner offer 4 positions and 4 characters to insert among the symbol.
Example: Barcode “1 2 3 4 5 6”.
Output- Barcode “1 2 A B 3 4 C D 5 6”.
Steps:
1) Scan Programming and Insert G1 characters setting barcode.
2) Use the ASCII code table to find the value of A→41,B→ 42.
3) Scan 4, 1 and 4, 2 from the barcode on the fold out back page.
4) Scan Finish from the barcode on the fold out page.
5) Repeat the same procedure in Insert G2 characters setting.
6) Scan Exit barcode.
7) Insert data group 1-4 position. Please refer to Chapter-Transmission, page 65 and in specific barcode that you want to use.

Program

Option Bar Code	Option	Alphanumeric Entry
 *8AE* Insert G1 characters setting	None 1-22 characters	00 * 00-ffH ASCII code
 *8AF* Insert G2 characters setting	None 1-22 characters	00 * 00-ffH ASCII code

8AG Insert G3 characters setting	None 1-22 characters	00 * 00-ffH ASCII code
8AH Insert G4 characters setting	None 1-22 characters	00 * 00-ffH ASCII code

%$$

Exit

Transmission

Preamble transmission: By setting Enable, Preamble will be appended before the data transmitted.

Postamble transmission: By setting Enable, Postamble will be appended after the data is transmitted.

Insert data group 1-4 position: The scanner offers 4 positions to insert among the symbol. The position default value is “00” to indicate no character insertion. Beside, make sure insertion positions are not greater than the symbols; otherwise the insertion data is not effective.

Code ID position: Upon your usage, the transmitting position of Code ID can be selected to place Before Code Data or After Code Data when it is transmitted.

$%+PRO **Program**

Option Bar Code	Option	Alphanumeric Entry
6AA Preamble transmission	Disable Enable	00 * 01
6AB Postamble transmission	Disable Enable	00 * 01

6AC Insert data group 1 position	00-64 (00: no insertion)	00-64 00 *
6AD Insert data group 2 position	00-64 (00: no insertion)	00-64 00 *
6AE Insert data group 3 position	00-64 (00: no insertion)	00-64 00 *
6AF Insert data group 4 position	00-64 (00: no insertion)	00-64 00 *
6AG Code ID position	Before code data After code data	00 * 01

%$$ **Exit**

Transmission

Code ID transmission: If your application is needed to transmit Code ID, you must set this to Proprietary ID or AIM ID.

Code length transmission: A number of data digits can be transmitted before the code data when Enable is selected. The total length of the barcode is the number of barcode data except Truncate Leading/Ending Digits. And the length is a number with two digits.

Code name transmission: This function is to show unknown barcode symbologies that include all readable symbologies of the scanner. When Enable is selected, Code Name will be transmitted before code data, you will know what kind of barcode symbology is.

Case conversion: Under the barcode, you can set the alphabet in either upper case or lower case.

Program

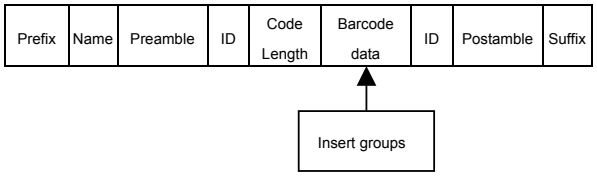
Option Bar Code	Option	Alphanumeric Entry
 Code ID transmission	Disable Proprietary ID AIM ID	00 * 01 02

6AI Code length transmission	Disable Enable	00 * 01
6AJ Code name transmission	Disable Enable	00 * 01
6AK Case conversion	Disable Upper case Lower case *For barcode data only	00 * 01 02

%$$

Exit

Format of barcode data transmission:



Test Chart

CODABAR-PARA

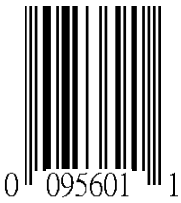
CODE-11 PARA

CODE-39 PARA

PDF-417

STANDRAD-25 PARA

EAN-8 PARA



INTERLEAVED-25 PARA

MATRIX 25 PARA

MSI/PLESSEY PARA

UPCA PARA

UK/PLESSEY PARA

ASCII Code Table *Note:* ■ *For keyboard wedge only.*

L \ H	0	1	0	1
0	Null		NUL	DLE
1	Up	F1	SOH	DC1
2	Down	F2	STX	DC2
3	Left	F3	ETX	DC3
4	Right	F4	EOT	DC4
5	PgUp	F5	ENQ	NAK
6	PgDn	F6	ACK	SYN
7		F7	BEL	ETB
8	Bs	F8	BS	CAN
9	Tab	F9	HT	EM
A		F10	LF	SUB
B	Home	Esc	VT	ESC
C	End	F11	FF	FS
D	Enter	F12	CR	GS
E	Insert	Ctrl+	SO	RS
F	Delete	Alt+	SI	US

L \ H	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	“	2	B	R	b	r
3	#	3	C	S	c	s
4	$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	‘	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	★	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	\	l	|
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL

Parameter Setting List

Program

Barcode standard parameter setting list

If you wish to display the current configuration of your LGZ7225, scanner over the host terminal/computer scan the Barcode standard parameter setting list bar code.

Unique parameter list

If you wish to display the unique parameter setting list, scan the unique parameter list bar code

System parameter setting list

If you wish to display the product information and revision number for your LGZ7225 scanner over the host terminal/computer, scan the System parameter setting list bar code.

String setting list

If you wish to display the string format list, scan the String setting list bar code.

Firmware version list

If you wish to display the firmware version, scan the Firmware version list.

WARNING: Default value initialization

If you wish to return theLGZ 7225 to all the factory default settings, scan the Default value initialization bar code.

Exit

0

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

Finish